Sony KDS-R60XBR1 60" Rear Projection HDTV

SXRD suddenly becomes affordable.

Inventing new names for existing technologies is nothing new. Consider SXRD, which stands for Silicon X-tal (crystal) Reflective Display, Sony's implementation of LCoS (liquid crystal on silicon). It first appeared year before last in their $30,000 Qualia 004 front projector, then last year in the $13,000 70" Qualia 006 rear-projection set (TPV 61). Recently, Sony introduced a smaller, more advanced version of the SXRD chip featuring closer inter-pixel spacing and improved black levels. Its first application is this mid-priced ($4999) RPTV and its smaller 50" cousin—the first non-Qualia sets to use SXRD.

The tiny 0.61" (diagonal) chip contains 2 million pixels, which provide 1920x1080 HD resolution—over twice as many pixels as competing 720p sets, including Sony's own LCD RPTVs. Like all LCD and LCoS displays, one chip is used per primary color (three total) rather than using an artifact-prone color wheel like single-chip DLP sets. Combine this resolution with the promise of dark blacks and you have two of the most necessary ingredients for a stunning picture, now at a price many more people can afford. I'll tell you right up front, if you're shopping for an HDTV, you need to read this review.

Features

You can expect all the high-end video features on any Sony XBR set, but this one adds an innovation first used in the company's excellent VPL-HS51 front projector (Issue 61) but not seen before in RPTVs. The ADVANCED IRIS feature monitors the signal's brightness level and automatically closes the iris in dark scenes and opens it up in bright scenes to improve the overall contrast. Also available is a manually adjustable iris that lets you reduce the light output as needed to favor dark blacks over maximum brightness, a feature that was in the Qualia 006. Both of these functions have several settings, but the ADVANCED IRIS adjustment is only available in PRO mode. The iris definitely contributes to this set's dark blacks, though they're actually quite dark even with the iris fully open.

A built-in ATSC (terrestrial HDTV) tuner allows digital reception from an antenna. If you have

digital cable, a CableCARD slot lets you receive it without the cable company's set-top box. Two zoom modes are available when watching HD sources, so you'll always be able to fill the screen.

Unfortunately, you must scroll through a list when selecting video inputs, though unused ones can be removed from the list, which does speed up the process. Two HDMI inputs are provided, as is a PC (VGA) input. Unlike plasma, it's safe to use this set as a PC monitor (1280x1024 maximum resolution). Although this is a 1080p display, the HD display inputs will not accept a 1080p source (not that there are any). A Memory Stick viewer lets you view stills and movies taken with your Sony digital camera.

A sleep button is included on the remote, but there's no button (and no menu item) to monitor digital signal strength when aligning the antenna.

Technical Evaluation

The KDS-R60XBR1 was difficult but not impossible to fault from a measurement standpoint. In particular, resolution was absolutely stunning, and this set was the first I've tested that could flawlessly reproduce the one-pixel-on/one-pixel-off section of a 1080i or 720p multiburst pattern via HDMI (and even through its ATSC tuner using the RF output of the signal generator). This was not the case with 480p HDMI. The component inputs had less HD resolution, but they proved better for 480-line sources. The scaler worked well on tough DVDs but average, at best, on the Silicon Optix *HQV Benchmark* torture disc.

Color temperature (the "color" of the black and white picture to which color information is added to make the final color picture) in Warm mode was intended by the factory to be 6500K, but it measured very slightly bluish (7100K) on brightest whites and increasingly bluish (7800K) in the midrange and in the dark grays. The ATSC tuner had even more blue error in darker grays. A barely noticeable reddish tendency below 30 IRE was the only thing that prevented an ideal grayscale after calibration. Iris operation had no noticeable effect on grayscale.

The color primaries all measured outside even HDTV standards. Some critics will make this into a big deal, since all displayed colors are made from various mixtures of these three primary colors, but I found overall color accuracy mostly quite good. Reds on this SXRD (x=0.673, y=0.321) should look less orange and more true red than standard, greens (x=0.289, y=0.687) should look less yellow and more true green, and blues (x=0.144, y=0.056) should look less purple and more blue. These would all seem to be desirable deviations from standards, but in real-world viewing, I found red to sometimes look a touch pinkish and certain shades of green (lime) to be overly prominent.

Maximum light output was an impressive 90fL (Warm color temp, either with a small window pattern or with the entire screen lit). It was impossible to clip whites with the contrast control. The level of black was 0.015fL with the iris open (!), which is less than a tenth the black level of many other microdisplays I've tested. The resulting peak contrast ratio was an incredible 6000:1. With both iris controls on full (minimum aperture), blacks were far too dark for an accurate measurement, though light output was reduced as well. Still, it's black level that makes darker movies look good, not excessive light output and peak contrast. Best ANSI contrast using a checkerboard pattern was 201:1 (good for an RPTV) and only slightly affected by the iris settings.

Video Setup

Right out of the box, this set's video controls, in their default positions, were remarkably well set—in fact, the best I've ever seen for factory presets. Of course, VIVID mode is way overdone unless you're watching in bright sunlight. STANDARD mode using all the factory defaults (except the WARM color-temp setting) was really quite nice for SD broadcast TV. For DVDs, however, this mode was a bit overenhanced, so I reduced the SHARPNESS control to compensate. Set the manual-iris control in the lowest two positions for best blacks in darker program material, higher for a brighter picture (such as sporting events).

I did most of my viewing in PRO mode, which opens up another full page of options. Here you can tweak the automatic iris for more or less contrast. Higher settings give stunning blacks and dark-scene detail in a dark home-theater environment. If you're using the WARM color temperature, turn the COLOR CORRECTOR off to reduce reds and flesh tones to the correct level.

The DTE (DIGITAL TEXTURE ENHANCER) and DETAIL ENHANCER functions both artificially sharpen the picture. If you were viewing a finger, DTE would make the fingerprint more distinct, while Detail Enhancer would enhance the outline of the finger. Avoid excessive settings of either, but especially DTE. DRC (DIGITAL REALITY CREATION) PALETTE also has the ability to make an over-enhanced mess, so keep the dot reasonably close to the lower-left corner of the onscreen two-dimensional control area. Don't forget to engage CINEMOTION (3:2 pulldown) if you're using an interlaced DVD player. A reduced-power setting is available in the setup menu that slightly reduces light output while extending bulb life and even further reducing black level—very useful.

Modes can be associated with specific inputs, then customized for that particular input. For example, you could use PRO mode with two different inputs and have different settings for each.

Viewing Comparisons

I have yet to review an RPTV that's real competition for this one, so I didn't even

waste my time dragging any out for a side-by-side comparison. Instead, I went straight to my reference 55" Hitachi plasma. I knew the Sony would win the dark scenes by a country mile, but I was really curious about the bright ones. The calibrated Hitachi has a way of looking sharp as a tack and remarkably lifelike on the best HD material, at least on brighter scenes. With both HD tuners receiving 1080i off-the-air signals and both sets adjusted to perfection (the Sony using the factory grayscale calibration), the contest was on.

Right away, several color differences stood out, though grayscale differences were subtle. On the Sony, reds were less orange, making tomatoes look much more real. Blues were a tiny bit bluer as well. Both sets were guilty of exaggerating certain shades of green. Flesh tones were more believable and hard to fault on the Sony. Resolution, too, was an easy Sony win—the writing on Conan O'Brian's cup was distinctly clearer as were other fine details in any picture—yet without resorting to enhancement tricks. Artifacts on the buildings behind Jay Leno were about half as annoying on the Sony, probably because no scaling (only deinterlacing) is required for 1080i sources. Switching to a 720p broadcast (more ideal for the plasma) didn't defeat the Sony's resolution advantage.

The Sony also had less video noise and a smoother, more film-like picture at close (10'-12') viewing distances. Up close, the plasma exhibited a bit of the screen-door effect. The Sony didn't, thanks to more pixels with less space between them, but the screen sometimes brought attention to itself by imparting a certain sheen to large objects, particularly bright white ones.

Still, the Hitachi plasma had an edge in that "you are there" illusion. Scenes containing a lot of white could go far brighter on the Sony, but more typical scenes were brighter on the Hitachi. This difference in gamma was the trick that made the plasma look more three-dimensional on the impressively shot late-night shows. The Sony, however, has a GAMMA CORRECTION control, and raising this a notch brightened up the midrange enough to give it that same illusion of reality the Hitachi sometimes had.

Dark shows in HD like *Law and Order* looked great on this set. Only the best CRT sets have this sort of dark-scene detail and color saturation. I saw virtually no false contouring. I suspect the Panasonic and latest Pioneer plasmas would come closer to the Sony's stunning black level and dark scene performance, but I'd be surprised if any current display (short of a front projector) could match this HD picture overall. This is one serious RPTV. Too bad you can't hang it on the wall.

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DVDs, which exhibit much less resolution than true HD programming, can look really beautiful on the very best CRT-based RPTVs, though only one or two truly high-end ones remain available. The Sony can hold its own against any of these, even in a dark home-theater environment, as few CRT sets have good enough DC restoration to allow them to beat the Sony's remarkable blacks. My best DVD results were achieved with the Pioneer DV-59AVi player from its HDMI output at 1080i, with component-video 480i/p not far behind. The difficult *Vanilla Sky* and *Master and Commander* discs were shown beautifully. Interestingly, 480i/p from the HDMI output was not as good; test patterns indicated that this resolution is slightly rolled off at the Sony's HDMI input.

Standard-definition sources like analog cable looked as good as I've seen them on such a large screen, but don't expect miracles.

Conclusion

We've waited a long time for a self-contained microdisplay that's as good for a dark home theater as it is for *Monday Night Football* with the lights up full. It's finally here. Sony's latest SXRD rear-projection TV is a real winner with few faults and fewer peers. I know there's great appeal for flat-panel aesthetics, but if you've got a little more floor space, the KDS-R60XBR1 will give you a better overall picture and longer life (and with no screen-burn potential) than any plasma now available, and for less money. Rear-projection sets produced up to this point—move to the rear. SXRD has set a new standard.

They're coming to take this set away from me now, but I'll be okay, in time. Besides, the newest 1080p DLP rear-projection sets are coming here next. Some of these may offer stiff competition, but you'll not likely see anything short of a top-flight front projector that will actually beat this set this year.

Randy Tomlinson is an independent ISF-certified calibrator in the Atlanta area and can be contacted via his Web site at **www.advancedtechservice.com.**

Superb resolution and stunning blacks

Excellent factory-default picture settings

Good factory grayscale calibration in WARM mode

No direct access to inputs on remote

Limited 480i/480p bandwidth via HDMI inputs

Scaler didn't ace the torture tests

SPECIFICATIONS

Sony KDS-R60XBR1 60" Rear Projection SXRD TV

Price: $4999

Technology: SXRD (rear projection)

Screen Size: 60"

Aspect Ratio: 16:9

Pixel Array: 1920x1080 (2,073,600 pixels x 3 colors)

Video Inputs: 2 RF, 3 composite, 3 S-video, 2 component, 2 HDMI (HDCP), 1 PC (D-sub 15-pin), 3 i.Link (1394).

Dimensions: 66" x 39 3/4" x 20 1/4"

Weight: 112 lbs.

Warranty: One-year parts/labor

MANUFACTURER INFORMATION

SONY CORPORATION

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www.sonystyle.com